



IRW
Atty. Dkt. No. 083847-0198

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Crocker et al.

Title: Nanometer-Scale Engineered Structures, Methods and Apparatus for
Fabrication thereof, and Applications to Mask Repair, Enhancement, and
Fabrication

Appl. No.: 10/689,547

Filing Date: 10/21/2003

Examiner: Ruggles

Art Unit: 1756

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to
Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-U.S. patent document and each non-patent document is being
submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not
intended as an admission that such document constitutes prior art against the claims of the
present application or that such document is considered material to patentability as defined in
37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be
appropriate to antedate or otherwise remove as a competent reference any document which is
determined to be a *prima facie* art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

RELEVANCE OF EACH DOCUMENT

Applicants respectfully request that the copending applications listed on the attached PTO-Form SB/08 be considered by the Examiner and be made of record in the present application and that, if necessary, any remarks be made of record.

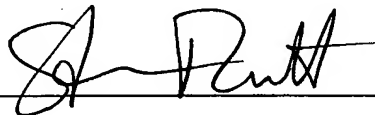
All of the documents are in English.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 CFR §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

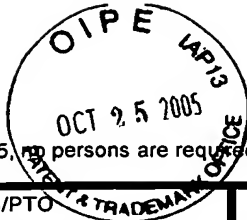
Respectfully submitted,

Date October 25, 2005

By 

FOLEY & LARDNER LLP
Customer Number: 23533
Telephone: (202) 672-5569
Facsimile: (202) 672-5399

J. Steven Rutt
Attorney for Applicant
Registration No. 40,153



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

Date Submitted: October 25, 2005

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number	10/689,547
Filing Date	10/21/2003
First Named Inventor	Crocker
Group Art Unit	1756
Examiner Name	Ruggles
Attorney Docket Number	083847-0198

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	C1	4,160,049		Narcus	07-03-1979	
	C2	5,104,684		Tao	04-14-1992	
	C3	5,441,386		Hsieh	08-15-1995	
	C4	5,980,998		Sharma et al.	11-09-1999	
	C5	6,090,507		Grenon et al.	07-18-2000	
	C6	6,096,459		Yang	08-01-2000	
	C7	6,114,073		Yang	09-05-2000	
	C8	6,396,966		Lewis et al.	05-28-2002	
	C9	6,451,375		Cotte et al.	09-17-2002	
	C10	6,455,175		Kozlov et al.	09-24-2002	
	C11	6,827,979		Mirkin et al.	12-07-2004	
	C12	2002/0009843		Kyushuo et al.	01-24-2002	
	C13	2002/0122992		Kanamitsu et al.	09-05-2002	
	C14	2003/0087200		Border et al.	05-08-2003	
	C15	2003/0127441		Haight et al.	07-10-2003	
	C16	2004/0127025		Crocker	07-01-2004	
	C17	11/056,391		Zhang	02-14-2005	
	C18	11/065,694		Cruchon-Dupeyrat	02-25-2005	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	C19	ALI, M. B., et al., "Atomic Force Microscope Tip Nanoprinting of Gold Nanoclusters", Langmuir, vol. 18, pp. 872-876 (2002).	
	C20	BIERI, N. R., et al., "Microstructuring by printing and laser curing of nanoparticle solutions", Appl. Phys. Letts., vol. 82, no. 20, pp. 3529-3531 (2003).	
	C21	CHEN, K. M., et al., "Selective Self-Organization of Colloids on Patterned Polyelectrolyte Templates", Langmuir, vol. 16, pp. 7825-7834 (2000).	

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: October 25, 2005 <i>(use as many sheets as necessary)</i>		Application Number	10/689,547
		Filing Date	10/21/2003
		First Named Inventor	Crocker
		Group Art Unit	1756
		Examiner Name	Ruggles
Sheet	2	of	3
		Attorney Docket Number	083847-0198

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	C22	CHIBA, A., et al., "Investigation of Pulsed Laser Removal of Cr and MoSi Film on a Quartz Substrate", Jpn. J. Appl. Phys., vol. 38, part 1, no. 12A, pp. 6577-6582 (1999)	
	C23	CHOU, S. Y., et al., "Imprint of sub-25 nm vias and trenches in polymers", Appl. Phys. Letters, vol. 67, no. 21, pp. 3114-3116 (1995).	
	C24	CORDELAIR, J., et al., "Electrical Characterization of Polymethylsiloxane/MoSi ₂ -Derived Composite Ceramics", J. Am. Ceram. Soc., vol. 84, no. 101, pp. 2256-59 (2001).	
	C25	FUJIKI, K., et al., "Preparation of a silica gel-carbon black composite by the sol-gel process in the presence of polymer-grated carbon black", J. Mater. Sci., vol. 33, no. 7, pp. 1871-1879 (1998).	
	C26	HECTOR, S., et al., "Review of progress in in extreme ultraviolet lithography masks", J. Vac. Sci. Technol. B, vol. 19, no. 6, pp. 2612-2616 (2001).	
	C27	HIDBER, P. C., et al., "Microcontact Printing of Palladium Colloids: Micron-Scale Patterning by Electroless Deposition of Copper", Langmuir, vol. 12, pp. 1375-1380 (1996).	
	C28	KIM, J., et al., "Alternating phase shift mask defect printability for 130 nm and 100 nm KrF lithography", Intl. SEMATECH, (May 2000).	
	C29	MALTABES, J. G., et al., "Issues for Advanced Reticle Fabrication: (You want that reticle when?), Future Fab., Intl., Vol. 11, pp. (June 2001).	
	C30	MARTIN, J. E., et al., "Sintering of Alkanethiol-Capped Gold and Platinum Nanoclusters", J. Phys. Chem. B, vol. 107, pp. 430-434 (2003).	
	C31	MÜLLER, A. D., et al., "Localized electrochemical deposition of metals using micropipettes", Thin Solid Films, vol. 366, pp. 32-36 (2000).	
	C32	PECKERAR, M. C., et al., "Issues in Nanolithography for Quantum Effect Device Manufacture", Handbook of Microlithography, Micromachining, and Microfabrication, SPIE Optical Engineering Press, Bellingham, WA, Chptr. 8, vol. I, pp. 681-763 (1997).	
	C33	SENTURIA, S. D., MICROSYSTEM DESIGN, Kluwer Academic Publishers, Norwell, MA, pp. 50-57 (2001).	
	C34	SKINNER, J. G., et al., "Photomask Fabrication Procedures and Limitations", Handbook of Microlithography, Micromachining, and Microfabrication, SPIE Optical Engineering Press, Bellingham, WA, vol. I, Chptr. 5, pp. 377-474 (1997).	
	C35	STELLACCI, F., et al., "Laser and Electron-Beam Induced Growth of Nanoparticles for 2D and 3D Metal Patterning", Adv. Mater., vol. 14, no. 3, pp. 194-198 (2002).	
	C36	SU, M., et al., "Moving beyond Molecules: Patterning Solid-State Features via Dip-Pen Nanolithography with Sol-Based Inks", J. Am. Chem. Soc., vol. 124, no. 8, pp. 1560-1561 (2002).	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: October 25, 2005 <i>(use as many sheets as necessary)</i>		Application Number	10/689,547
		Filing Date	10/21/2003
		First Named Inventor	Crocker
		Group Art Unit	1756
		Examiner Name	Ruggles
Sheet	3	of	3
		Attorney Docket Number	083847-0198

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	C37	TSUBOKAWA, N., et al., "Carbon Black/Alumina Gel Composite: Preparation by Sol-Gel Process in the Presence of Polymer-Grafted Carbon Black and Its Electric Properties", J. Poly. Sci. Part A-Polymer Chemistry, vol. 37, no. 18, pp. 3591-3597 (1999).	
	C38	WANG, X., et al., "Scanning Probe Contact Printing", Langmuir, vol. 19, pp. 8951-8955 (2003).	
	C39	WASSON, J. R., et al., "Writing, repairing, and inspecting of extreme ultraviolet lithography reticles considering the impact of the materials", J. Vac. Sci. Technol. B, vol. 19, no. 6, pp. 2635-2640 (2001).	
	C40	WILBUR, J. L., et al., "Microfabrication by Microcontact Printing of Self-Assembled Monolayers", Adv. Mater., vol. 6, no. 7/8, pp. 600-604 (1994).	
	C41	WILSON, O., et al., "Laser Writing in Polarized Silver Nanorod Films", Adv. Mater., vol. 14, no. 13, pp. 1000-1004 (2002).	
	C42	WOLF, S., et al., <u>Silicon Processing for the VLSI Era</u> , Lattice press, Sunset Beach, CA, pp. 485-486 (1986).	
	C43	WUELFING, W. P., et al., "Monolayer-Protected Clusters: Molecular Precursors to Metal Films", Chem. Mater., vol. 13, pp. 87-95 (2001).	
	C44	ZHANG, W., et al., "Multilevel nanoprint lithography with submicron alignment over 4 in. Si wafers", Appl. Phys. Letts., vol. 79, no. 6, pp. 845-847 (2001).	

Examiner Signature		Date Considered	
---------------------------	--	------------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.